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# UNIVERSITÀ DEGLI STUDI DI TORINO

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## PERENNIPORIA FRAXINEA POPULATION: A CASE OF STUDY IN AN URBAN PARK AT PAVIA (ITALY)

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*Perenniporia fraxinea* (Bull.) Ryv. is either a parasite or a saprotrophic fungus growing on a wide variety of hardwood trees species. Sporomata are perennial, pileate, large, single or imbricate, woody. The fungus is reported in forests, gardens and parks, but also on street trees where it usually causes white rot on the lowest parts of the stem, rarely on emerging roots (1). Therefore, this species can affect the stability of trees, with possible consequences for people and properties.

The populations of pathogens like *P. fraxinea* are often studied by using molecular techniques associated with morphological studies such as somatic incompatibility tests (2). Despite its wide distribution, areas where *P. fraxinea* sporomata are abundant look uncommon, so that intra- and interpopulation comparison can be hard to perform (3). In Pavia municipality (Lombardy, Italy) this species is abundant and is likely to be one of the most widespread tree pathogens in urban areas.

The present investigation aimed at better understanding *P. fraxinea* populations. In particular, genetic variation among *P. fraxinea* isolates collected from sporomata found on closely located trees was investigated, coupling molecular analyses with somatic incompatibility tests.

Sporomata were mostly collected in Pavia municipality, namely “Parco della Vernavola” (the widest park at north of the town); a few samples were also collected from surrounding urban sites and from other Italian municipalities as outsiders (Zerbolò and Santa Maria della Versa in Pavia Province; Illasi in Verona Province).

Analyses through RAMS (random amplified microsatellites) pointed out a high genetic diversity among isolates even if they were collected only few meters far from each other. This finding may suggest the spread through root contacts is unlikely for this fungus. Somatic incompatibility tests confirmed the diversity, but failed to distinguish all genotypes identified through RAMs.

A significant correlation between genetic diversity and spatial distribution of isolates collected in “Parco della Vernavola” was observed.

This is one of the first reports on the populations of *P. fraxinea*.

1) Szczepkowski A. (2004) Polish Botanical Journal, 49(1), 73-77

2) Tabata M., Suyama Y., Abe Y. (2009) Plant Disease, 93, 826-831

3) Guglielmo F., Gonthier P., Garbelotto M., Nicolotti G. (2010) Letters in Applied Microbiology, 51, 90-97